CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 98-006

AMENDMENT OF SITE CLEANUP REQUIREMENTS ORDER NOs. 89-107 and 90-122, FOR:

FMC CORPORATION

for the property located at

333 WEST JULIAN STREET
SAN JOSE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location**: FMC Corporation (FMC), hereinafter called the discharger, owns a former manufacturing facility located at 333 West Julian Street, San Jose, Santa Clara County (Site, Figures 1 and 2). The Site is centered on Old West Julian Street, bounded on the west by the Guadalupe River and on the east by Route 87, the Guadalupe Parkway.

2. **Site History**: FMC and predecessor companies have occupied the Site since the early 1900s. Manufacturing was first conducted at this location by the John Bean Spray Pump Company (pressurized farm and orchard sprayers) and the Anderson-Barngrover Manufacturing Company (agricultural machinery and food-processing equipment). The two companies later merged to form the Food Machinery Corporation, manufacturing and assembling agricultural and food-processing equipment, and, during two separate periods, manufactured and assembled military tracked vehicles. Manufacturing at the Julian Street location ceased in 1986 and the facility is currently leased for warehousing and other storage purposes. While there have been some changes in corporate identification and Site management since 1986, FMC has retained property ownership and currently manages the environmental issues at the Site.

3. **Named Dischargers**: FMC is named as a discharger based on ownership, operations, and past chemical use activities. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding such parties to this Order.

4. **Regulatory Status**: The Board has adopted the following Orders for this site:

   - Site Cleanup Requirements, Order No. 89-107, adopted June 21, 1989
   - Amended Site Cleanup Requirements, Order No. 90-122, adopted August 15, 1990
   - NPDES Permit Order No. 92-018, adopted February 19, 1992 and rescinded by Order No. 97-008, adopted on January 15, 1997
   - By Discharge Authorization letter dated December 23, 1996, General NPDES Permit Order No. 94-087, adopted by the Board on July 20, 1994, was incorporated for the Site

5. **Reason for Amendment:** This Order revises the Soil Cleanup Standards set forth in Board Order 90-122. This Order also requires the discharger to complete additional tasks necessary to provide for groundwater protection and risks associated with exposure to residual soil contamination. Additionally, this Order requires that Institutional Constraints be developed for the Site requiring that the discharger and future owners and occupants of the Site comply with the to be completed Risk Management Plan.

6. **Investigation and Remediation History**: In 1986, FMC began environmental investigations of the Julian Street facility. Soil sampling in former manufacturing and product storage areas revealed the presence of petroleum hydrocarbons, VOCs and metals. Further investigations included the installation of groundwater monitoring wells which detected VOC groundwater pollution in two shallow water-bearing zones (the A-level and B1-level) beneath the southern half of the site.

   Four remedial investigation and/or alternative evaluation reports were submitted by FMC to the Board prior to and pursuant to provisions of Order No. 89-107:

   - Comprehensive Environmental Assessment Report, FMC Corporation, 333 West Julian Street Facility, San Jose, California, January 1989;
   - Evaluation of Interim Remedial Alternatives, 333 West Julian Street Facility, San Jose, California, November 1989;
   - Remedial Investigation, FMC Corporation, 333 West Julian Street Facility, January 1990;
   - Remedial Alternatives Report, FMC Corporation, 333 West Julian Street Facility, San Jose, California, April 1990 (RAR).

   Quarterly groundwater monitoring has been conducted since the third quarter of 1989.

   The RAR proposed final cleanup activities and levels for the site. On August 24, 1990, the Board adopted Order No. 90-122, "Amendment of Site Cleanup Order No. 89-107, Adoption of Final Cleanup Levels For: FMC Corporation-Ground Systems Division, 333 West Julian Street, San Jose, Santa Clara County". Pursuant to Provisions A.2.b and

A.2.d. of Order No. 90-122, respectively, FMC proposed and subsequently implemented VOC source removal in the South Yard using soil vapor extraction (SVE). In addition, A-level groundwater cleanup was initiated using an extraction trench system at the south and east property boundaries, with treatment of extracted groundwater by air stripping.

The SVE system was installed in the South Yard and began operation in 1991. The discharger shut down this system on March 1, 1994 due to the very low levels of VOCs being recovered and the observation that asymptotic mass removal conditions had been reached. In July 1996, the discharger submitted a letter report entitled "333 West Julian Street Soil Vapor Extraction System Effectiveness Assessment", describing the results of samples collected in the South Yard during December 1992 and February 1994. By letter dated September 23, 1996, Board staff advised that the report was acceptable and provided permission to discontinue soil vapor extraction.

Provisions A.2.a. and A.2.c. of Order No. 90-122 adopted soil TPH cleanup levels of 100 mg/kg and soil metal cleanup levels of approximately ten times greater than Soluble Threshold Limit Concentrations (STLCs), including cleanup levels of 250 mg/kg for total copper and 50 mg/kg for total lead. Finding 3 of Order No. 90-122 described the need for additional investigation of metal impacts in the northwest area of Building 1 and under the Building 1 foundation near the Guadalupe River. Provisions A.3. and A.4., respectively, required submittal of a Remedial Investigation Report Addendum (November 1990) and a Remedial Alternatives Report Addendum (June 1991). FMC subsequently demolished Building 1 and conducted and submitted the required reports which included additional investigation of metals in soils in the vicinity of former Building 1.

7. **Risk Assessment**: In May 1992, FMC submitted a report, "Building 1 - Metal Impacted Soil Health Risk Assessment", which evaluated possible cleanup goals of 500 mg/kg for lead in the top two feet of soil and 4000 mg/kg for lead in soils below two feet, and concluded that these levels would not present a significant adverse risk to human health or to groundwater. The report further concluded that additional cleanup for copper or TPH would not be warranted based on health risk or potential groundwater contribution.

In September 1996, FMC submitted a report entitled "Revised Soil Remediation Goals for Metals and Total Petroleum Hydrocarbons, 333 West Julian Street, San Jose, Santa Clara County, California," based on a reconsideration of the proposed future use of the property as commercial/industrial and of the surrounding property (Guadalupe River corridor) as recreational. This report recommended revised soils remediation goals as follows: lead - 4000mg/kg; copper - 2800mg/kg; diesel and oil and grease (O&G) - 5700 mg/kg. These recommended cleanup levels were based on the California Department of Toxic Substances Control "Lead Spread" Model for lead, the U.S. Environmental Protection Agency Region IX Preliminary Remediation Goals (PRGs) for copper, and protective levels developed for FMC's property at 333 West Brokaw Road in Santa Clara, Santa Clara County, California, for TPH.

The Santa Clara Valley Water District (SCVWD) (as sponsor for the U.S. Army Corps of Engineers) plans to implement a flood control project with respect to the Guadalupe River which will include excavation of soils and development of the area along the South Yard adjacent to the river for recreational use. Results from soil investigations for soil lead levels indicated that approximately 4900 cubic yards of soil from the west side of the South Yard would be characterized as California (but not RCRA) hazardous waste, if excavated, and could require removal before or coincident with flood control work.

Based on current land use planning documents, the proposed future land use for the Site is industrial/commercial while the surrounding land usage is either industrial or recreational. A risk-based approach was used to establish the lead cleanup level, and included consideration of chronic exposures to lead in Site soils. Application of the DTSC "Lead Spread" model using a recreational exposure scenario established a risk-based cleanup level for lead in soil at the Site of 4000 mg/kg.

The US Environmental Protection Agency Region IX (U.S. EPA 1995), Preliminary Remediation Goal (PRG) of 2,800 mg/kg in residential soil was proposed as a cleanup level for copper. The average copper concentration in surficial and shallow subsurface soils are substantially less than this residential PRG, therefore, further work necessary to develop an industrial/commercial cleanup standard for copper was not warranted.

Several human health and groundwater protective cleanup standards for petroleum hydrocarbons were developed by FMC and approved by the Board during investigation and remediation of the nearby 333 West Brokaw Road facility in Santa Clara, California. A groundwater protective standard of 5700 mg/kg of TPH as diesel assumed surrogate PAHs partitioning into water and subsequent consumption of that groundwater by humans. A value of 8,000 mg/kg of TPH as mineral oil was determined to be protective of human health for soils impacted by mineral oil, while diesel concentrations up to 20,000 mg/kg, based on weight percentages of indicator PAH in virgin diesel, were determined to not adversely impact water quality. Due to the sporadic nature and type of TPH encountered at the Site, the risk assessment recommended that 5700 mg/kg as diesel oil and grease (O&G) be utilized as the cleanup goal. With one isolated detection, all values of TPH recorded at the 333 West Julian site are below this value.

8. **Risk Mitigation**

The discharger proposes to mitigate risks associated with residual chemicals in soil at the Site by requiring that: (1) all soil containing lead above specified cleanup levels be temporarily covered during redevelopment, and (2) any soil containing copper, lead, petroleum hydrocarbons and/or VOCs above specified cleanup standards encountered during demolition and redevelopment be excavated and properly treated or disposed. In addition groundwater use at the Site shall be restricted through enforcement of a recorded Environmental Restriction. These actions are to be conducted in accordance with the procedures to be defined in the Risk Management Plan proposed pursuant to the amendments of this Order. This Order requires the discharger to implement the Risk

Management Plan for the entire Site. The Board reserves the right to take additional action.

9. **Soil Cleanup Plan:**

a. **Total Petroleum Hydrocarbons**: No further action is required for Site soils impacted by TPH. With one isolated exception, all soil samples analyzed for TPH were below the TPH cleanup level of 5700 mg/kg. TPH has not impacted Site groundwater (A- or B1-level aquifers).

b. **Volatile Organic Compounds (VOCs) in Soils**: Soil vapor extraction at the known VOC source area has effectively remediated VOC impacts to below the cleanup standard of 1.0 mg/kg. No further action is required for VOCs in soils.

c. **Metals in Soils**: Elevated lead levels in soil have been identified in historical fill areas adjacent to the Guadalupe River, as shown in Figure 3. The South Yard area of impact is within an area planned for engineered flood control improvements by the U.S. Army Corps. of Engineers (COE). The South Yard area soil mitigation shall be in accordance with the amendments of this Order and the specifications as outlined in the COE Guadalupe River Project Construction Contract 3A, Specifications (Final Design Submittal), 10 March 1997 (COEFDS).

There are no known areas where average metals concentrations exceed the cleanup standards. However, should soils impacted above the standards be identified in the future, excavation and offsite disposal would be the appropriate remedial action. Average (95% UCL) lead concentrations in soils up to 4000 mg/kg may remain in place along the Guadalupe River bank provided that permanent cover is installed and maintained to prevent exposure, erosion to the River, and that the specifications and guidelines of the COEFDS are met.

10. **CEQA:** This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

11. **Notification:** The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

12. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that Board Order 90-122 is amended by the findings above and as follows:

PROVISIONS:

A. Provisions A.2.a through A.2.c are amended as described in the findings of this Order and by the following Soil Cleanup Standards:

Soil Cleanup Standards: Remedial action will be required if the average concentration of a contaminant exceeds the cleanup standard. The average concentration is defined as the 95% upper confidence level of the mean of a sample set.

Constituent in Soil	Cleanup Standard (mg/kg)	Basis
Lead	4000	CalEPA "Lead Spread" risk assessment, recreational scenario
Copper	2800	USEPA Region IX PRG, residential exposure (conservative)
Total VOCs	1.0	RWQCB staff recommendation
TPH as diesel, Oil and Grease	5700	Health Risk based, groundwater protective

B. Provision B of this Order adds the following tasks and time schedules and provides amendment to Order 90-122:

a. **RISK MANAGEMENT PLAN**

COMPLIANCE DATE: March 31, 1998

Submit a Risk Management Plan acceptable to the Executive Officer that proposes risk mitigation measures associated with exposure to residual chemicals in soil and groundwater such as implementation of appropriate health and safety measures during potential demolition, and any excavation and/or construction activities at the Site. Provide for re-evaluation of risks associated with exposure to residual contamination remaining in soil if there is a proposed land use change from existing commercial/industrial land use.

b. **WORKPLAN FOR PERMANENT COVER**

COMPLIANCE DATE: 90 days prior to implementation of soil remedial action.

Submit a workplan acceptable to the Executive Officer for installation of permanent cover of the lead-impacted soil along the Guadalupe River bank. This workplan will describe the planned installation of a permanent cover and associated erosion control measures. The cover should consist of a minimum of 9 inches in thickness of clean soil material or 4 inches of asphalt or concrete. Any soil cover shall also include vegetation to prevent erosion. Areas being improved by the Army Corps of Engineers, will receive adequate cover and erosion control measures, and will not require additional soil, asphalt or concrete cover.

c. **IMPLEMENTATION OF PERMANENT COVER**

COMPLIANCE DATE: Coincident with Corps of Engineers flood control project work

Implement the installation of permanent cover of lead-impacted soils along the Guadalupe River bank pursuant to the approved workplan. One hundred and twenty (120) days following completion of implementation, submit a technical report acceptable to the Executive Officer describing the implementation of permanent cover installation, including scale maps of areas receiving permanent cover and including routine inspection and maintenance plans.

d. **INSTITUTIONAL CONTROLS**

COMPLIANCE DATE: At time of submittal of technical report under Task (c), above.

Institutional constraints in the form of an Environmental Restriction under California Civil Code § 1471 in form and substance satisfactory to the Executive Officer shall be recorded against the Site. The document shall require the discharger or present owner, if discharger is not the owner at the time, and future owners and occupants of the Site to comply with the Risk Management Plan. The document shall also prohibit the use of groundwater beneath the Site without the prior written consent of the Executive Officer. The discharger or present owner, if not the discharger, shall record the document and submit copies to the Board within 30 days after approval of draft form by the Executive Officer.

e. **Delayed Compliance:** If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 21, 1998.

Loretta K. Barsamian
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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Attachments: Figures 1 - 3

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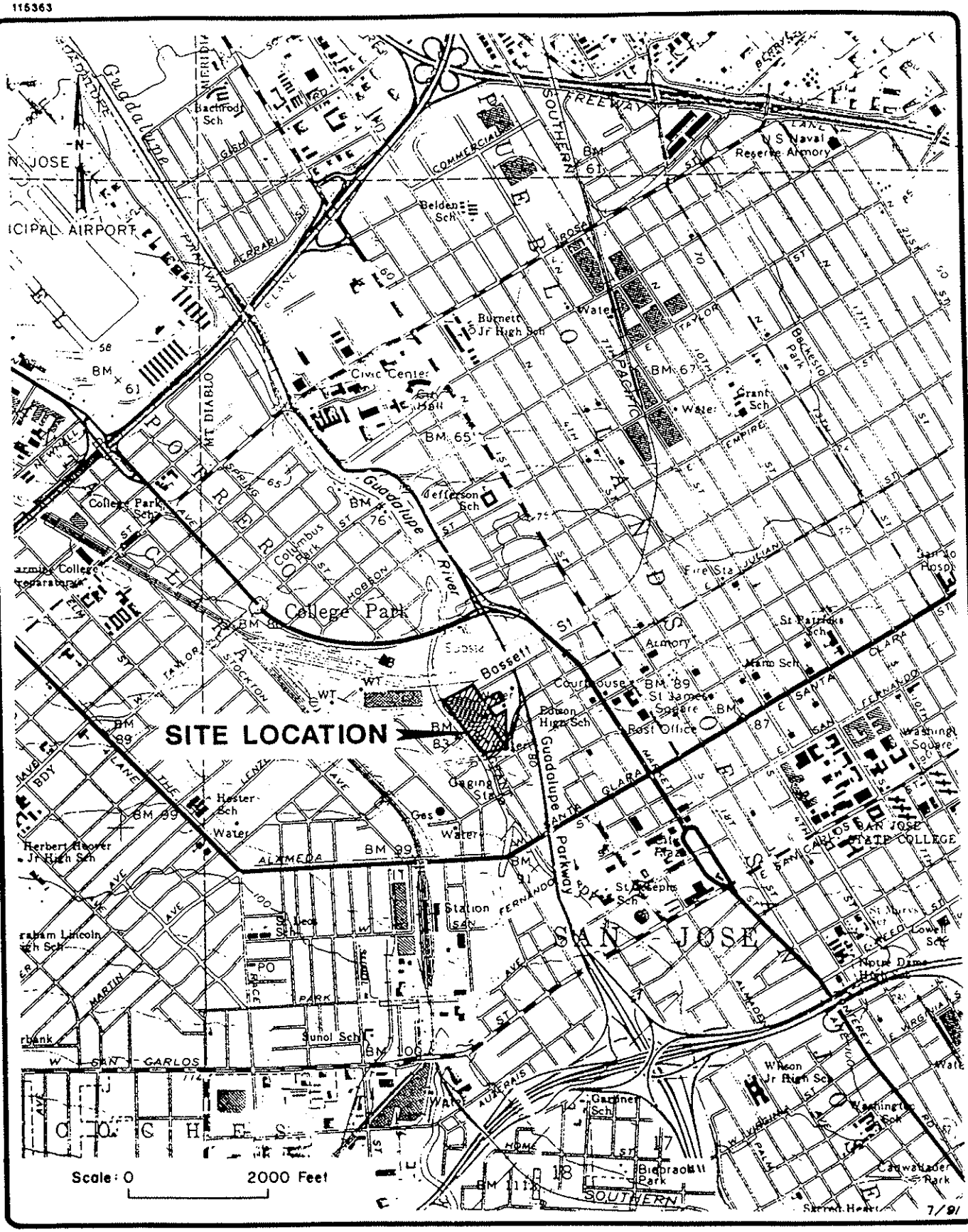
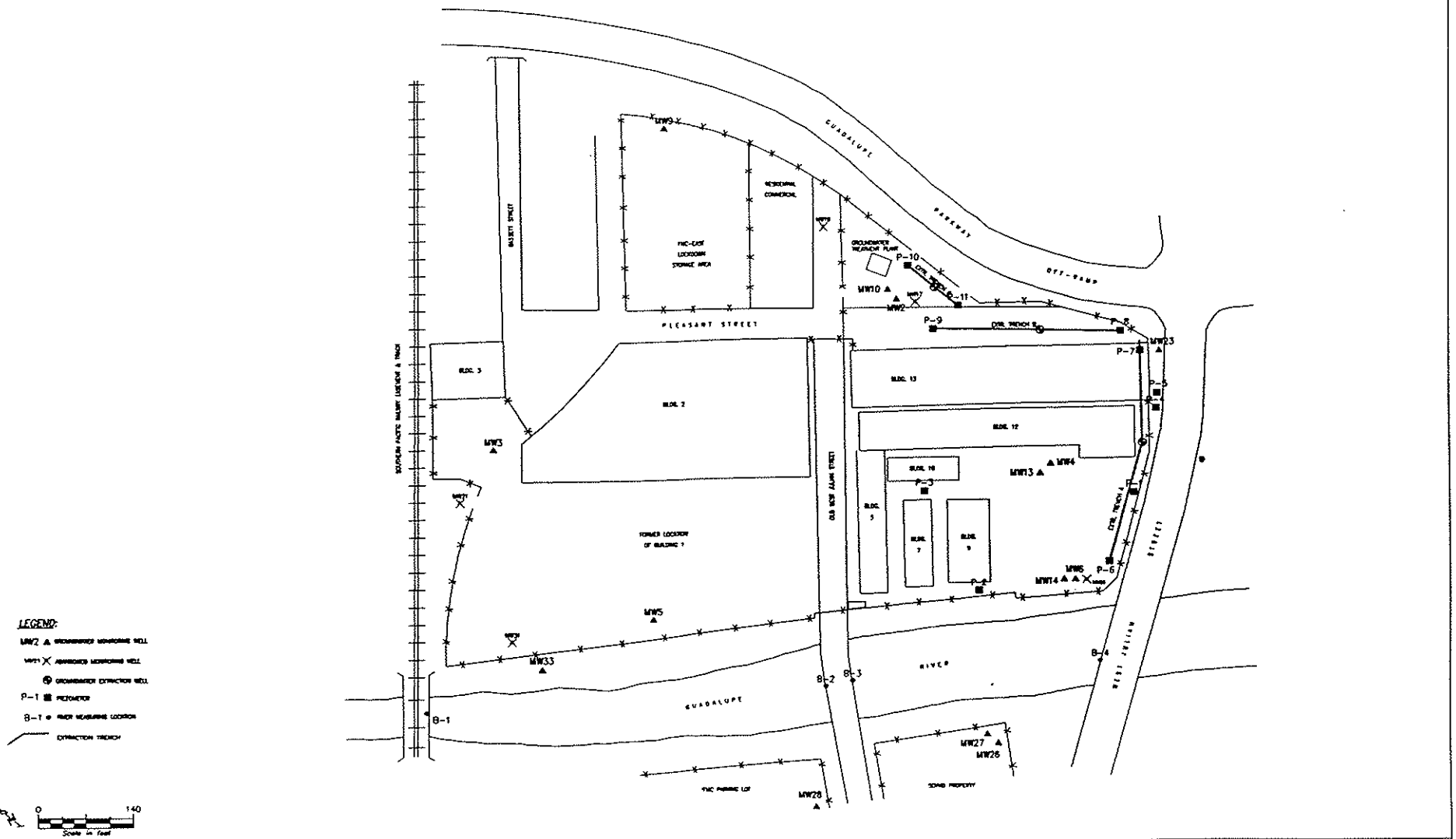


FMC

FMC CORPORATION
JULIAN STREET FACILITY
SAN JOSE, CALIFORNIA

SITE LOCATION

FIGURE
1



FMC Corporation
1125 Coleman Avenue
San Jose, CA 95110

333 WEST JULIAN STREET

MONITORING WELL LOCATIONS

OCTOBER 1997 | FIGURE 2

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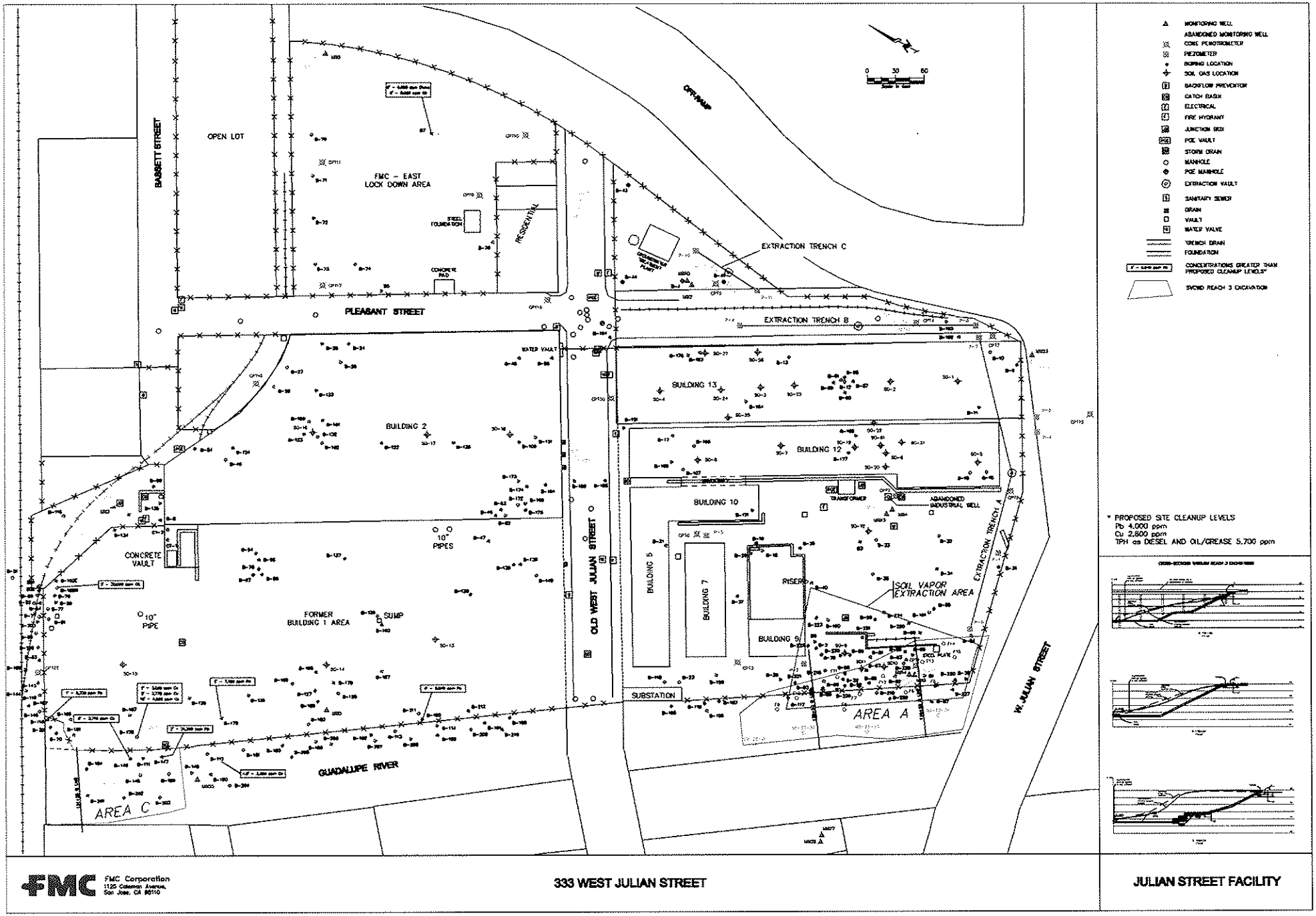
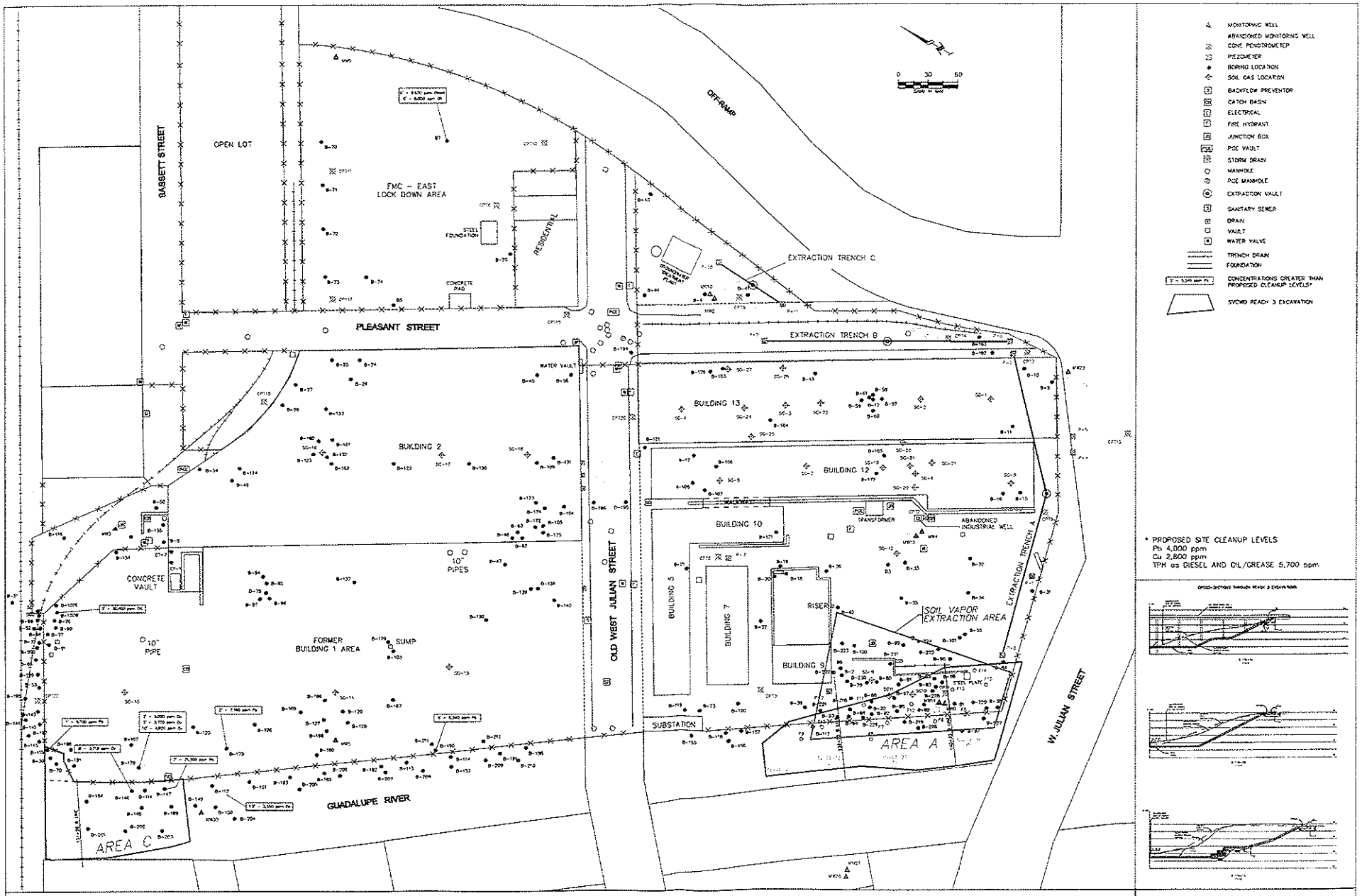


Figure 3

NOTE: A LARGER VERSION OF FIGURE 3 IS AVAILABLE FROM STAFF (1/98 - GAL)



FMC Corporation
1125 Coleman Avenue
San Jose, CA 95110

333 WEST JULIAN STREET

JULIAN STREET FACILITY

Figure 3

98-006